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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/786,622 | 02/24/2004 | Kazumasa Inoue | TKMTP127 | 2045 |

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| EXAMINER | |
|---|---|
| HUANG, MEI QI | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1713 | |

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/786,622 | INOUE ET AL. | |
| | Examiner | Art Unit | |
| | Mei Q. Huang | 1713 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *24 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *12-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-17* are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 2003-55175.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1. Applicant's election without traverse of Invention I, claims 1-11, in the reply filed on May 23, 2005 is acknowledged. Claims 12-17 are withdrawn from further consideration.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerkar et al. (US patent 5,604,273) in view of Ohta et al. (US Patent 5,660,626), further in view of Berke et al. (US Patent 5,571,319), and yet, still further in view of Kloetzer et al. (US Patent 4,927,463).

The prior art to Kerkar et al. directs to a cement admixture composition comprising a alkenyl ether/maleic copolymer which is represented by the formula shown

at column 3, lines 15-31, which reads on the instant claimed first process in making the component A. Kerkar et al. disclose that the number average molecular weight of the copolymer is preferably 1,000 to 200,000 (column 3, lines 54-57). Kerkar et al. also teach that the salt of the hydrolyzed product of the copolymer is a salt formed by the maleic acid unit. Exemplary salts include alkali metal salts and alkaline earth metal salts (column 3, lines 61-67), which reads on the instantly claimed third process.

The difference between the prior art and the present application is that Kerkar et al. do not include the second process as required by the instant claim 1. Kerkar et al. do not include components B and C in the admixture formulation.

However, Kerkar et al. disclose that the component (n), i.e. the maleic acid unit in the formula III, can be present in the form of the anhydride, or a partially or completely hydrolyzed product or as a salt of the hydrolyzed product (column 3, lines 32-34) and the hydrolyzed product is a product having a hydrolyzed maleic acid unit resulting from the hydrolysis of the maleic anhydride unit in the copolymer (column 3, lines 59-60). This disclosure would give a hint of exploring a further process for the graft copolymer to one having ordinary skill in the art.

The prior art to Ohta et al. relates to a shrinkage-reducing dispersion for use in cementitious compositions comprising a graft polymer, which is a polycarboxylic acid or a salt thereof, having side chains derived from oligoalkyleneglycol (Abstract). "—CH(CO(OM))—CH(CO(OR))—" unit is recognized in General Formulas S, A and B (columns 5-6) wherein M is H and R is oligoalkyleneylycol (column 5, line 51 and column 6, line 1, and also column 2, lines 10-19).

In light of Ohta et als' teaching of obtaining a graft polymer with said side chains through hydrolysis of the maleic anhydride unit, it would have been obvious to one having ordinary skill in the art at the time the invention was made to hydrolyze the maleic anhydride unit in Kerkar et als' copolymer, as taught by Ohta et al., because Kerkar et al. expressively imply hydrolysis of the maleic acid unit and Ohta et al. teach that the graft polymer having the said chain obtained through such hydrolysis provides shrinkage-reducing in cementitious composition (Abstract).

As to the component B, the prior art to Berke et al. directs to a storage stable cement admixture comprising a water soluble alkylene glycol (column 1, lines 11-18). Polypropylene glycol (MW=425) is used in Example II (column 6, lines 60-61). Shrinkage reduction is shown in Table 2, column 7. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a water soluble alkylene glycol, as taught by Berke et al., in Kerkar et als' admixture motivated by a reasonable expectation of successfully obtaining the corresponding admixture for concrete since Berke et al. have taught the benefits of increased storage stability and reduced shrinkage by incorporating such glycol in a concrete/cement admixture.

As to the component C, the prior art to Kloetzer et al. provides a stabilized aqueous dispersion comprising gypsum and a surface-active which is a phosphoric acid esters represented by formula I or II (Abstract, column 2, lines 61-68, and column 3, lines 10-31), wherein the formula II meets the instant claimed component C of formula 5. Accordingly, it would have been obvious to one having ordinary skill in the art at the

time the invention was made to incorporate a phosphoric acid ester surfactant, as taught by Kloetzer et al., in Kerkar et als' admixture motivated by a reasonable expectation of successfully obtaining the corresponding admixture for concrete since Kloetzer et al. have taught the benefits of increased storage stability by incorporating such phosphoric acid ester surfactant in a gypsum admixture.

In regard to claim 2, Kerkar et al. teach that a cement admixture composition should contain the copolymer in a weight ratio of 1-100 (column 4, lines 40-42); Berke et al teach that a cement admixture composition can contain up to 35 wt% of the glycol (column 7, lines 38-40); Kloetzer et al. disclose that phosphoric acid ester is present in an amount of 0.1-2 wt% of the aqueous dispersion composition (column 7, lines 31-33).

In regard to claim 3, Kerkear et al. require the number average molecular weight for the copolymer to be 1,000 to 200,000 (column 3, lines 54-57).

As to claims 4-9, the rejection made to Claim 1 described previously in this Office Action would be applied herein to reject Claims 4-9.

As to claims 10-11, Kloetzer et al. disclose that the dispersions are normally adjusted to a pH value of 9-10 when an aqueous solution of alkali metal hydroxide is used (column 4, lines 50-57). Such pH adjustment would result in a phosphoric acid ester of formula II (column 3, line 20) wherein –OH would become –OM (M=alkali metal).

***Priority***

5. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on March 3, 2003. It is noted, however, that applicant has not filed a certified copy of the 2003-55175 application as required by 35 U.S.C. 119(b).

***Conclusion***

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure. The following references have been cited to show the state of the art with respect to the study of cement admixture.

US Patent 4,419,134 to Ishijima et al.

US Patent 6,409,824 to Veeramasuneni et al.

US Patent 6,486,260 to Yuasa et al.

US Patent 6,034,208 to McDaniel et al.

US Patent 5,670,578 to Shawl et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mei Q. Huang whose telephone number is (571) 272-3549. The examiner can normally be reached on 8am - 4pm, Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mei Q. Huang
Examiner

June 20, 2005

DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700